Social Science in Public Health

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As public health does less and less to the people, and more and more with the people, good intentions will no longer be enough. How we may learn to work understandingly and productively with people is the burden of this provocative presentation.

✤ For several decades the comparative study of communities has been a central concern of the social scientist, whose primary aim is to discover the "properties" of human behavior. Knowledge of these properties is of particular interest to public health professionals whose characteristic object of concern is the social rather than the individual organism. In a manner of speaking social organisms have their own anatomies and physiologies. Although a community is composed of individual beings, the totality is much more than the sum of its parts; it has properties of its own.

Any community not only has a habitat; it also has its social structure (the way people relate themselves) and a corresponding cultural pattern consisting of shared ideas, attitudes, assumptions, and values. The sociocultural system of any group is as much a part of the people's environment as the physical and material surroundings in which they live. As such it plays an important role both in shaping the profile of health and illness and in influencing the outcome of programs to improve community health. Analysts of sociocultural systems can contribute their share to fundamental health research, especially where social factors have etiological significance, as in psychiatric and chronic diseases. They can also serve the cause of improving program implementation, particularly by assisting in the difficult task of program evaluation.

Evaluating Health Programs

Since the term "evaluation" often carries specialized technical connotations in public health work, the word "assessment" may be more convenient for present purposes. By and large, program performance can be assessed according to criteria of effort, effect or process, or any combination of these. The effort criterion measures the energy and action of the health team. By this method progress is reported in such terms as miles traveled, meetings attended, talks given, pamphlets distributed, movies shown, inquiries received, visits made, interviews held, patients attended. The effect criterion measures results of effort rather than the effort itself. Use of the effect method usually requires a clear declaration of program objectives. The project specifies what it aims to get done—what changes in incidence or attitude or organization it seeks to induce—then checks to see how much was accomplished in the indicated direction. The process criterion assesses the route by which the effect was achieved; if no significant changes are registered, it may still be constructive to analyze why the program went around in circles.

Assessment of Effort—The first of these three, the effort yardstick, draws its appeal from a number of circumstances. It is usually easier to maintain administrative statistics than to know or measure what is actually happening

to the community. There is a certain concreteness and objectivity about itemizing things done and people seen; these can be measured and totaled and they therefore count as "facts" rather than surmises. Furthermore, American culture seems to place a high value on effort for its own sake—if one keeps busy, good will presumably come of it. In the estimation of many middle-class Americans to measure one's busyness is almost like measuring one's virtue and effectiveness.

In part the effort yardstick of program assessment is a kind of magic by which we keep up our spirits, but it has real value, too. At the very least statistics of effort can be negatively conclusive. If figures show that an agency is inactive, it can fairly well be inferred that little good is being accomplished in the way of health promotion. It does take effort to get anything done, even though not all effort leads to favorable results.

The effort yardstick answers the question: What did you do? After this is disposed of the next legitimate question is: Did it make a difference? This query calls for the second method, or the effect yardstick.

Assessment of Effect—Suppose a health agency is dedicated to changing a community's health habits or attitudes. After a period of effort the agency wants to know: Did any change occur? Was the change the one intended? Was the program the cause of the change? There are fairly standardized technics for supplying the answers. In principle, the classical experimental design for this purpose is straightforward. By means of interviews or questionnaires and use of proper sampling methods the health habits of a community, for example, are measured before the campaign and again after the campaign.

Some years ago Dodd employed this design in a number of Syrian villages and found that over a given period of time hygienic habits had improved by about 20 per cent as he measured them. Conceivably the improvement might have come despite the health campaign and not because of it. To test this possibility Dodd had also made base line measurements in other Syrian communities where no health programs were attempted, assuming that on remeasurement these "control" villages would show less health improvement than the experimental ones. Actually, the control villages also showed an improvement of about 20 per cent during the course of the same interval, thus making it difficult for the health workers to claim credit for the change in their experimental villages. Why did this happen? In the Syrian instance we do not really know. This illustrates a limitation of the method of measuring effect; it tells us whether but not why. To find the answer we must use the yardstick that measures process. Another example will help clarify matters.

Recently a team of psychiatrists, sociologists, and social workers engaged in an intensive six-month campaign to alter attitudes toward the mentally ill in a fairly prosperous prairie town in Canada. They reasoned that an unfavorable attitude toward discharged mental patients was a factor influencing the high rate of relapse and readmission to overcrowded hospitals. They established themselves in the experimental community, gained the cooperation of civic leaders, editors, and other influential persons and used multiple means and resources: motion pictures, pamphlets, special books placed in the library, notices in the paper, radio broadcasts, public speakers, as well as

small group discussions, and so forth.

Before and after the campaign they collected several hundred questionnaires designed to reveal attitudes toward the mentally ill—conceptions of cause, curability, degree of personal responsibility for helping a sick relative, willingness to associate with a person discharged from a mental hospital. Like Dodd in Syria they twice administered the same set of tests in another town where no campaign of health education was attempted. As expected, the people in this control town showed no significant change of attitude over the six months' interval. But unfortunately, neither did the people where the intensive educational campaign had been tried. The project personnel had a good measure of their effect—virtually zero. The reasons for this disappointing outcome were instructive. But to understand the reasons they had to investigate process. Incidentally, it should be noted that useful program assessment in terms of process does not necessarily hinge on program success. It can be equally illuminating to seek out the processes that underlie failure.

Assessment of Process—In the Canadian experiment three circumstances made it possible to understand the processes at work. For one thing project personnel conducted a series of intensive interviews before and after the educational campaign; this material enabled them to analyze the dynamics of popular beliefs about mental illness. For another, they took note of the changing reception they received; from cordiality the attitude slowly turned to apathy and ended in hostility. Furthermore, they used a social science frame of reference to "make sense" of the evidence they collected and observed.

This in brief is what they concluded about the process that negated their efforts. One of the ideas they had sought hard to implant was that no sharp line divided the sane from the insane; that personality types fell along a continuum running from the fully normal to the fully abnormal; and that most released hospital patients were therefore not essentially different from other people and should be treated accordingly. The aim of this type of information was to increase understanding and tolerance and thus reduce relapse rates.

But people in the community clung stubbornly to their black-and-white perception of normality and abnormality. At the bottom, never certain about their own sanity, they had apparently erected a wall of psychological defense that sharply divided the sane from the insane. This attitude worked hardship on the hospitalized minority, but it gave a measure of reassurance to the majority and helped keep them in the fold of the normal. In challenging this popular attitude the educators were arousing dormant insecurities. The citizens preferred to let sleeping dogs lie. Subjected to rational educational efforts and having no ready rational defenses, they did as most people do under the circumstances, after an initial period of willing cooperation, they showed outward apathy and ultimately expressed open antagonism toward program personnel.

The practical lesson in this Canadian case is fairly clear. Before trying to change old health habits and ideas for new, whether these concern sanity or sanitation, it is wise to examine what the established habits and ideas are and, more important, what psychological and social functions these beliefs and practices perform. One must understand not only the explicit, but also the implicit purposes of a community's customary ways. It is especially in identifying the implicit functions of a group's belief and behavior patterns, that social science can hope to be of help. While social scientists can assist in measuring program effects, their greater contribution to program "evaluation" will

probably lie in probing beneath cases of success and failure to unravel the implicit processes ever at work in the community.

So much for program assessment. It should be evident that social scientists, if judiciously selected and used, can help program operations in other ways as well. They can do social mapping in preparation for program planning, and they can help keep programs active and effective by liaison work between the people in the community and project personnel. This does not necessarily imply that social scientists should act as social workers or health educators, who serve as operational members of the public health team. Often social scientists can make their best contribution by checking on the public pulse to gauge the impact of health action, rather than participating directly in the action phase of the program. The judicious use and selection of social scientists requires an awareness of the different specialties of social research and their customary methods of investigation.

Social Science Disciplines

There scarcely exist universal social scientists, no more than there are universal natural scientists in this age. Actually, men are trained as economists, political scientists, psychologists, sociologists, or anthropologists, receiving a doctoral degree in one or another of these disciplines but usually not in social science as such. This fact is of practical importance to health workers, since a given teaching or service situation may benefit more from one particular discipline within the social sciences than from another.

Each of the social science disciplines has its strong points, and although the similarities among the several social sciences may be greater than the differences between them, it may be useful to

consider the peculiarities of method that distinguish several of the social disciplines. The fields of psychology, sociology, and anthropology all have in common the fact that they tend to produce their own data; in this respect they contrast with government and economics, which lean heavily on library documents and statistical compilations. Yet psychology, sociology, and anthropology differ among themselves with respect to the kinds of primary data they tend to produce. Social psychology leans heavily on experimental data, with people or animals used as subjects. Sociology leans heavily on the use of questionnaires and interviews, most commonly single interviews of many people. Anthropologists lean heavily on field notes, based on their own direct observations of behavior and, as a rule, on repeated and extensive interviews with relatively few informants whom they come to know fairly well.

To some extent the difference in method between anthropology and sociology reflects a difference in type of population with which they have customarily dealt; it may also reflect a difference in the stage of inquiry, anthropologists more often working in situations where less is known and where less can be taken for granted. Thus, sociologists have studied differences between American parents who permitted their children to take part in trial polio vaccine tests and parents who refused to extend such permission. The issue was formulated, the population was subdivided according to a some-do and some-do-not criterion, and a number of questions were asked which were successfully pretested to reveal systematic differences between the two subpopulations.

Edward Wellin, an anthropologist, was likewise interested in a some-do and some-do-not criterion when he undertook to explain why it was that some women in a Peruvian town yielded to health department persuasions to boil

contaminated drinking water, while many other women, equally exposed to persuasion, did not change their habits. However, he did not set up aforehand two sharply contrasting populations, nor did he design a set of questions to ask systematically. Working in a situation where he could not know in advance what questions would turn out to be relevant, he spent several months talking to housewives, conversing with the local hygiene worker, and observing both in their daily routines. He finally found that he could classify his population with respect to the water boiling issue into six types. Two groups of women were already in the habit of boiling their water even before the health department arrived, although the groups did so for quite opposite reasons. Two other groups of housewives yielded to persuasion, but the motivating factors were distinct. Two large groups remained unconverted, and for dissimilar reasons.

A key fact that emerged only slowly was that the boiling of drinking water, if it was done at all and regardless of the particular motive that inspired it, was always performed during the short interval immediately following the preparation of breakfast. All other times of the day were ruled out for a variety of practical and cultural reasons, including the pervasive belief that water boiled in the afternoon or evening and kept overnight would have to be reboiled on the following day. This belief was related to conceptions of "hot" and "cold" substances so common in many parts of Latin America.

Thus, the initial job of the anthropologist is often not so much that of devising questions as finding out by a combination of qualitative methods what are the relevant questions to ask. In comparison to sociologists, then, anthropologists tend to be less formal in their approach, less dependent on random and representative sampling, and less

concerned with measures of statistical significance. On the other hand, they place greater emphasis on the necessity of learning the local idiom, on establishing close relationships with a limited number of informants, and on direct observation. Each type of social scientist can make his appropriate contribution to public health practice, the selection depending on the problem, the population, and the stage of inquiry.

Public health workers cannot be expected to take best advantage of social science concepts and methods unless they have an opportunity to learn how social scientists work. One way to provide such information is to build social science instruction into the curriculums of public health schools.

Social Science in a Public Health School

All degree candidates at the Harvard School of Public Health are now required to take an orientation course called "Ecology: Biological and Social." Lectures in the course cover such topics as regional geography, demography, population dynamics, and human maturation. Social scientists in the school and elsewhere at Harvard University present lectures on communication, public opinion, authority, social structure, culture pattern, family, and community. To discuss the lecture material and relate it to students' own experiences the class is divided into small sections once each week. To provide a springboard for productive discussion in these informal seminar sessions, all students are asked to read a series of case studies of community reactions to specific health situations and health programs. Before publication * these studies were

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* Health, Culture, and Community: Case Studies of Public Reactions to Health Programs. Edited by Benjamin D. Paul with the collaboration of Walter B. Miller. New York: Russell Sage Foundation, 1955.

pretested in numerous seminars at the school and rewritten by the authors in the light of comments and criticisms in order to maximize the teaching potential of the material.

Typically the case studies report what does happen, not what ought to happen. They cover a variety of conditions and problems, ranging from an analysis of the doctor-patient relationship in rural India to an examination of the nurses' unofficial functions in an urban well baby clinic, from a program of mental health education to a project of preventive and community psychiatry, from an effort to educate Peruvian housewives to boil contaminated drinking water to an attempt to conduct a health survey in a socially divided Alabama town. The 16 studies can be grouped under six broad categories: understanding the community, reaction to crises, sex patterns and population problems, effects of social segmentation, vehicles of health administration, combining service and research. Each study raises a practical problem, presents the pertinent facts, analyses the sources of success or failure, and draws attention to some of the wider implications, ending with a summary and a selected list of annotated references for optional additional reading.

One of the points of view the case materials convey is that culture is a web of meaning and that this web interposes a layer between man and his natural environment. The concept of culture is obviously of importance to people in health education who seek to change collective habits. It may be less obvious that culturally conditioned perceptions have an important bearing on the more "technical" aspects of public health, such as that of sanitary engineering which is concerned, among other things, with delivering a safe water supply. The Peruvian study by Wellin, as already indicated, dramatizes the many ways in which water is subject to cul-

tural interpretation. Wellin also reports that an anti-Chagas campaign had unforeseen repercussions in Peru.

Good technical work had actually brought Chagas' disease under control. But the rural population, regarding flies a greater menace than triatomes, the bearers of Chagas' disease, used the prevalence of flies as their criterion of success. They were pleased when the spraying program reduced the swarming flies, but dismayed when flies eventually returned in annoying force. People began to say that the insecticide was very effective at first but that it was now of inferior quality; that the spraying personnel were getting very careless in their work; and that the campaign officials were becoming corrupt, appropriating the good insecticide for some ulterior motive and substituting a diluted mixture. Scandalized by what they considered a fly-control fiasco, the citizens prepared a resolution which they presented in the capital of Peru, forcing the health officer responsible for the campaign to face charges of malfeasance. He was eventually cleared, but the whole affair was unpleasant for the people in public health. Nor did the episode improve public relations, despite the good work in lowering the incidence of Chagas' disease.

In addition to imparting social science concepts, the case studies help create respect for cultural or subcultural differences. Such group differences as food habits and religious practices are evident to students of public health, but it is often less apparent that cultural variation also operates in many other areas that directly affect health work, e.g., varying cultural expectations with respect to personal privacy, structure of the family, and the doctor-patient relationship.

What the cases also convey is that culture is not a mere collection of customs but tends to be a system. Thus some customs are difficult to change

not only because they are familiar and "natural" to those who practice them, but also because they are linked to other customs. Because of this linkage, planned changes in one area of the culture often bring about unplanned changes in other aspects of the system.

The cases are useful in making public health students aware of the fact that they, too, have cultural preconceptions which may possibly impede their technical effectiveness. For example, they can be made aware of the fact that, as creatures of their class or culture, they tend to regard change as a value in itself and therefore intrinsically good, but that there are things in this world which might just as well remain unchanged for the moment.

Moreover, many Americans have a passion for forming councils and committees as instruments for getting across new public health habits and technics. This penchant for creating voluntary groups, successful as it is in some situations, may work against them in other cultural settings. A case study from Brazil documents how the formation of a village community council on the American pattern impeded rather than promoted the aims of a community development program. A Spanish-American case from Colorado indicates how a cooperative health association, intended to provide better medical care, acted instead as a barrier to health improvement among Spanish-speaking people. The Spanish-Americans may have wanted better medical care, but they were not prepared to engage in a series of activities that appeared irrelevant to them: attending meetings, discussing policy, electing officers, making and following by-laws, and paying dues to an organization.

The realization that health workers, too, have their culturally conditioned assumptions and values may enable them to see that in some instances they can more effectively communicate new health knowledge and skills if they strip down their program to these essentials, omitting the cultural accretions that are not intrinsic to their mission and that are less readily acceptable to the recipient population. While it may perhaps be our duty to help people help themselves to better health, it is not necessarily our duty to make them over in our own cultural image.

Dr. Samuel Darling, a malariologist who worked on the Panama Canal project, once remarked: "If you wish to control mosquitoes you must learn to think like a mosquito." This advice applies not only to mosquito populations one seeks to damage, but also to human populations one hopes to benefit. If one wishes to help a community improve its health, one must learn to think like the people of that community. Before teaching people new health habits, it is wise to learn the existing habits, how these are linked to one another, what functions they perform, and what they mean to those who practice them.